UNITED STATES PATENT AND TRADEMARK OFFICE

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09/748,431	12/26/2000	Benjamin Thomas Smith	GOOGLE-7 (GP-015-91-US)	4462

26479 7590 01/06/2006	EXAMINER
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ART UNIT	PAPER NUMBER
2165	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
	09/748,431	SMITH ET AL.
Office Action Summary	Examiner	Art Unit	
	Tony Mahmoudi	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>07 October 2005</u>.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10,12-20,26-28 and 30-38* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10,12-20,26-28 and 30-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Remarks

1. In response to communications filed on 07-October-2005, claims 1, 14, 16, 26, 30-32, and

36-38 are amended per applicant's request. Therefore, claims 1-10, 12-20, 26-28, and 30-38

are presently pending in the application, of which, claims 1, 14, 16, 26, 30-32, and 38 are

presented in independent form.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness

rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3. Claims 1-10, 12-15, and 30-35 are rejected under 35 U.S.C. 103(a) as being unpatentable

over King et al (U.S. Patent No. 6,307,549) in view of Weissman et al (U.S. Patent No.

6,453,315.)

As to claim 1, King et al teaches a method of providing search results in response to an

ambiguous search query, the ambiguous search query including a sequence of ambiguous

information components (see Abstract and see column 3, line 63 through column 4, line 15),

the method comprising

receiving a sequence of ambiguous information components from a user (see column 2, line 67 through column 3, line 11);

obtaining mapping information that maps the ambiguous information components to less ambiguous information components (see column 18, lines 19-65);

using the mapping information to translate the sequence of ambiguous information components into at least two corresponding sequences of less ambiguous information components (see figures 4C, 6, 11 and 12, and see column 24, line 64 through column 25, line 31);

providing the at least two sequences of less ambiguous information (see figures 11 and 12.)

King et al does not teach:

each of the sequences effectively being joined by a logical "OR" operation request, as an input to a search engine;

obtaining search results from the search engine; and

presenting the search results to the user.

Weissman et al teaches a meaning-based search and retrieval system (see Abstract), in which he teaches:

each of the sequences effectively being joined by a logical "OR" operation request (see column 8, lines 31-40 and see column 10, lines 20-27), as an input to a search engine (see column 3, lines 1-7, see column 3, line 62 through column 4, line 4, and see column 7, lines 9 through column 8, line 30);

obtaining search results from the search engine (see column 9, lines 57-64 and see column 12, lines 39-51); and

presenting the search results to the user (see column 3, lines 5-7 and see column 12, lines 39-51.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified King et al to include each of the sequences effectively being joined by a logical "OR" operation request, as an input to a search engine; obtaining search results from the search engine; and presenting the search results to the user.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have modified King et al by the teachings of Weissman et al, because including each of the sequences effectively being joined by a logical "OR" operation request, as an input to a search engine; obtaining search results from the search engine; and presenting the search results to the user, would enable the system to receive user's input (multiple keywords), search for entities containing any one of the entered keywords (logical OR), and display the results to the user.

As to claim 2, King et al as modified, teaches wherein the mapping information is based on the configuration of a standard telephone keypad (see King et al, column 9, lines 30-35, where "standard telephone keypad" is read on "standard Touch-Tone keypad".)

As to claim 3, King et al as modified, teaches wherein the ambiguous information components comprise numbers and the less ambiguous information components comprise

letters (see <u>King et al</u>, figure 1B, indicating that each "number" represents up to three "letters", hence, the "numbers" are more ambiguous than the "letters".)

As to claim 4, <u>King et al</u> as modified, teaches wherein each of the ambiguous information components comprises a single press of a key and the less ambiguous information comprises letters that correspond to the key (see <u>King et al</u>, figure 1B, indicating that each "number" represents up to three "letters", hence, the "single press of a key" (representing a number) is more ambiguous than the "letters" corresponding to the "single press of a key".)

As to claim 5, <u>King et al</u> as modified, teaches wherein the ambiguous information components comprise phonemes (see <u>King et al</u>, column 7, lines 22-45 and see figure 6, where the "n" in "Done" and the "z" in "Doze" are considered phonemes, since they are the "smallest phonetic unit in a language that is capable of conveying a distinction in meaning".)

As to claim 6, <u>King et al</u> as modified, teaches wherein the less ambiguous information components comprise alphanumeric information (see <u>King et al</u>, figure 1B, indicating that each "number" represents up to three "letters", hence, the "numbers" are more ambiguous than the "letters". Therefore, an "alphanumeric" component is less ambiguous than an all-"numeric" component.)

As to claim 7, <u>King et al</u> as modified, teaches wherein the ambiguous information components comprise visual information (see <u>Kin et al</u>, column 17, lines 28-58.)

As to claim 8, <u>King et al</u> as modified, teaches wherein the act of using comprises using the mapping information in combination with a lexicon to translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components (see <u>King et al</u>, column 6, line 49 through column 7, line 3, where a "lexicon" is read on "dictionaries".)

As to claim 9, <u>King et al</u> as modified, teaches wherein the lexicon is a dictionary (see <u>King et al</u>, column 6, line 49 through column 7, line 3.)

As to claim 10, <u>King et al</u> as modified, teaches wherein the lexicon is a list of sequences (see "dictionary" in <u>King et al</u>, column 6, line 49 through column 7, line 3) of less ambiguous information components that previously have been processed by the search engine as search queries (see <u>King et al</u>, figure 8F and see column 23, lines 27-36.)

As to claim 12, <u>King et al</u> as modified, teaches wherein the act of providing comprises:
determining a subset of the translated sequences of less ambiguous information components (see <u>King et al</u>, figure 11 and see column 24, line 64 through column 25, line 31); and
providing the subset of translated sequences of less ambiguous information components as an input to a search engine (see <u>Weissman et al</u> column 3, lines 1-7, see column 3, line 62 through column 4, line 4, and see column 7, lines 9 through column 8, line 30.)

As to claim 13, <u>King et al</u> as modified, teaches wherein the act of determining comprises comparing the translated sequences of less ambiguous information components against a lexicon (see <u>King et al</u>, column 3, line 60 through column 4, line 16, where "lexicon" is read on "stored vocabulary modules".)

As to claim 14, <u>King et al</u> teaches a method of providing search results in response to an ambiguous search query, the ambiguous search query including a sequence of ambiguous information components (see Abstract and see column 3, line 63 through column 4, line 15), the method comprising:

receiving a sequence of ambiguous information components from a user (see column 2, line 67 through column 3, line 11);

obtaining mapping information that maps the ambiguous information components to less ambiguous information components (see column 18, lines 19-65);

using the mapping information to translate the sequence of ambiguous information components into a plurality of corresponding sequences of less ambiguous information components (see figures 4C, 6, 11 and 12, and see column 24, line 64 through column 25, line 31);

determining a subset of the plurality of sequences of less ambiguous information components by comparing the plurality of sequences of less ambiguous information components with terms used in past search queries stored in a search query log (see column

2, line 60 through column 3, line 16 and see column 22, lines 24-29, where "log" is read on "frequency of use".)

For the teachings of "providing the subset of sequences of less ambiguous information components as an input to a search engine; obtaining search results from the search engine; and presenting the search results to the user", the applicant is directed to the remarks and discussions made in claim 1 above with regards to the teachings of Weissman et al.

As to claim 15, King et al as modified, teaches wherein the act of determining comprises using statistical information about the co-occurrence of the less ambiguous information components within the sequence (see King et al, column 2, line 60 through column 3, line 16, see column 3, line 63 through column 4, line 15, and see column 22, lines 24-29, where "co-occurrence" is read on "most frequency appearing".)

As to claim 30, King et al teaches a computer-readable medium containing one or more instructions (see King et al, column 22, lines 1-23) for providing search results in response to an ambiguous search query, the ambiguous search query including a sequence of ambiguous information components (see Abstract and see column 3, line 63 through column 4, line 15.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claim 1 above.

As to claims 31 and 32, <u>King et al</u> teaches an apparatus for providing search results in response to an ambiguous search query (see figure 1A, see column 4, lines 56-61, and see column 6, lines 20-36.)

For the remaining steps of this claim, the applicant is directed to the remarks and discussions made in claims 1 and 16 above.

As to claim 33, <u>King et al</u> as modified, teaches wherein the act of using the mapping information to translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components (see <u>King et al</u>, figures 4C, 6, 11 and 12, and see column 24, line 64 through column 25, line 31) uses the mapping information to directly translate the sequence of ambiguous information components into one or more corresponding sequences of less ambiguous information components (see <u>King et al</u>, column 12, lines 39-63, see column 15, lines 25-45, and see column 22, lines 55-65.)

As to claim 34, <u>King et al</u> as modified, teaches wherein the ambiguous information components are more ambiguous than the less ambiguous information components due to a limited capability of a user input device (see <u>King et al</u>, column 2, lines 60-67, where "limited capability of a user input device" is read on "a reduced keyboard", and see column 6, lines 37-48.)

As to claim 35, <u>King et al</u> as modified, teaches the method further comprising looking up search results using an index including entries, at least one entry including a sequence of less

ambiguous information components mapped to a set of one or more items (see <u>King et al</u>,

figures 11 and 12.)

4. Claims 16-20, 26-28, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable

over <u>King et al</u> (U.S. Patent No. 6,307,549) in view of <u>Weissman et al</u> (U.S. Patent No.

6,453,315), and further in view of <u>Katariya</u> (U.S. Patent No. 6,226,635 B1.)

As to claim 16, <u>King et al</u> teaches a method of providing search results in response to an

ambiguous search query (see Abstract and see column 3, line 63 through column 4, line 15),

comprising:

receiving a sequence of information components from a user, each information

component corresponding to a key press (see column 2, line 67 through column 3, line 11

and see column 3, lines 17-22);

obtaining mapping information that maps each of the key press information components

to a plurality of other information components, each corresponding to the same key press

(see column 18, lines 19-65);

using the mapping information to determine, from the sequence of key press information

components, other sequences of information components by converting each key press

information component to each of the other information components that correspond to the

key press component (see figures 4C, 6, 11 and 12, and see column 24, line 64 through

column 25, line 31.)

For the teachings of "providing one or more of the received sequence and the other

sequences as a search query input to a search engine; obtaining search results from the search

engine; and presenting the search results to the user", the applicant is directed to the remarks

and discussions made in claim 1 above with regards to the teachings of Weissman et al.

King et al as modified, still does not teach wherein the search results include references

to web page documents.

Katariya teaches a layered query management system (see Abstract), in which he teaches

wherein the search results include references to web page documents (see figure 13 and see

column 8, lines 60-67.)

Therefore, it would have been obvious to a person having ordinary skill in the art at the

time the invention was made to have modified King et al as modified by the teaching of

Katariya, because including references to web page documents in the search results, would

enable the system to expand the users' search abilities to remote databases and provide for a

distributed search system in addition to the local search and retrieve capabilities, and would

enable the user to access such web page documents by clicking on the provided references.

As to claims 17 and 28, King et al as modified, teaches wherein the mapping information

is based on the configuration of a standard telephone keypad (see King et al, column 9, lines

30-35, where "standard telephone keypad" is read on "standard Touch-Tone keypad".)

As to claim 18, King et al as modified, teaches wherein the received information

components comprise numbers and the other information components comprise letters (see

King et al, figure 1B, where each key (press) represents one number and up to three letters,

also see figure 6, block 76, depicting numeric and alphabetic information components.)

As to claim 19, King et al as modified, teaches wherein both the received and other

information components comprise letters (see King et al, figure 6, block 76, and see figure

11, block 1206.)

As to claim 20, King et al as modified, teaches wherein the act of providing comprises

providing at least two sequences of less ambiguous information components to the search

engine using a logical "OR" operation (see Weissman et al, column 8, lines 31-40 and see

column 10, lines 20-27.)

As to claim 26, King et at teaches a method of providing search results to a user in

response to an ambiguous search query (see Abstract and see column 3, line 63 through

column 4, line 15), comprising:

receiving at least two number words constituting a number phrase (see column 2, line 67

through column 3, line 11 and see column 3, lines 17-52);

translating each number word into one or more letter words, based on mapping

information, to generate a plurality of letter phrases, each of the letter phrases corresponding

to the number phrase (see figures 4C, 6, 11 and 12, and see column 24, line 64 through

column 25, line 31.)

For the teachings of "forming a search query to a search engine wherein the search query includes at least one of the letter phrases; obtaining search results from the search engine in response to the search query; and providing the search results to a user", the applicant is directed to the remarks and discussions made in claims 1, 14 and 16 above with regards to the teachings of Weissman et al.

For the teaching of: "wherein the search results include references to web page documents", the applicant is directed to the remarks and discussions made in claim 16 above, in view of the teachings of Katariya.

As to claim 27, King et al as modified, teaches wherein the act of providing comprises providing at least two of the letter phrases, each of the letter phrases being effectively joined by a logical "OR" operation request, as a search query to a search engine (see King et al, figure 12, block 1306, and see Weissman et al, column 8, lines 31-40 and see column 10, lines 20-27.)

As to claim 36, King et al as modified, teaches wherein the search results provided to the user have been ranked such that search results corresponding to documents that include an exact match of at least one of the letter phrases are provided higher than search results corresponding to documents that do not include an exact match of any of the letter phrases (see King et al, column 15, lines 53-67 and see column 24, lines 26-47.)

As to claim 37, <u>King et al</u> as modified, teaches wherein the search results exclude search results corresponding to documents that do not include an exact match of any of the letter phrases (see <u>King et al</u>, figure 8G and see column 23, lines 37-48.)

As to claim 38, <u>King et al</u> teaches a method of providing search results in response to an ambiguous search query, the ambiguous search query including a sequence of ambiguous information components (see Abstract and see column 3, line 63 through column 4, line 15), the method comprising:

receiving a sequence of ambiguous information components from a user (see column 2, line 67 through column 3, line 11) associated with a language (see column 6, lines 64-67, and see column 28, lines 48-65);

obtaining mapping information that maps the ambiguous information components to less ambiguous information components (see column 18, lines 19-65);

using the mapping information to translate the sequence of ambiguous information components into a plurality of corresponding sequences of less ambiguous information components (see figures 4C, 6, 11 and 12, and see column 24, line 64 through column 25, line 31); and

reordering the obtained search results using the language of the user (see column 28, lines 58-65, where "reordering" is read on "caused to appear first or last".)

For the teachings of "providing the one or more sequences of less ambiguous information as an input to a search engine; obtaining search results from the search engine; and

presenting the search results to the user", the applicant is directed to the remarks and

discussions made in claims 1 and 14 above.

For the teaching of: "wherein the search results include references to web page

documents", the applicant is directed to the remarks and discussions made in claim 16 above,

in view of the teachings of Katariya.

Response to Arguments

5. Applicant's arguments filed on 07-October-2005 with respect to the rejected claims in view

of the cited references have been fully considered but they are either moot in view of the new

grounds for rejection, or they are not deemed persuasive. Previous rejection made to claims

36-37, under U.S.C. § 112, second paragraph, have been overcome by the applicant's

amendments to these claims and have been withdrawn accordingly.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

The following patents are cited to further show the state of art with respect to methods

and systems of searching with ambiguous search queries in general:

Patent/Pub. No.	Issued to	Cited for teaching
US 2002/0087514A1	Payne et al.	Query input technique in which a user supplies a few character-based queries.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.
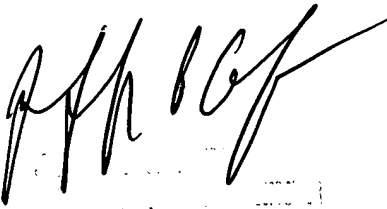
8. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (571) 272-4078. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Jeffrey Gaffin, can be reached at (571) 272-4146.

tm

January 3, 2006